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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,202	11/20/2003	Ryosaku Inamura	0941.68751	9823

7590

09/24/2004

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EXAMINER

MILLER, BRIAN E

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,202

Applicant(s)

INAMURA ET AL

Examiner

Brian E. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/29/04</u> . | 6) <input type="checkbox"/> Other: ____  |

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Claims 1-9 are pending.

### ***Specification***

1. The disclosure is objected to because of the following informalities: (a) The Abstract should also include language directed to the magnetic storage apparatus, which is also set forth in the claims. Appropriate correction is required.

### ***Claim Objections***

2. Claim 3 is objected to because of the following informality: (a) the word "system" used twice in line 4 should be changed or omitted for clarity. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama et al (US 5,815,342) in view of Fukuichi (JP 02-227814).

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Akiyama et al discloses a perpendicular magnetic recording medium 20, as shown in at least FIGs. 1& 2, including at least: a perpendicular magnetic recording layer 23 and a backing layer 22 backing said perpendicular magnetic recording layer, said backing layer having an in-plane magnetization (see col. 7, lines 8-10), characterized in that said backing layer is formed of a ferrimagnetic material having a compensation temperature. Since the specific temperature and/or the material as set forth in the claim, e.g., GdFe alloy, has not been recited in Akiyama et al, it is considered that the "compensation temperature" being within the vicinity of a recording/reproducing temperature in which reproducing of magnetic information is made from said perpendicular magnetic recording layer has not been expressly taught by Akiyama et al.

Fukuichi, discloses a perpendicular magnetic recording medium including a ferrimagnetic backing layer 2 which is formed of a GdFe alloy, e.g., GdFeCo, which material would provide the aforementioned proper "compensation temperature" (see CONSTITUTION-first 4 lines).

From this teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the CoZrNb backing layer of Akiyama et al with the backing layer formed of GdFeCo, as taught by Fukuichi. The motivation would have been: lacking any unobvious or unexpected results, substituting one well-suited material for another similar material, would have resulted from routine engineering experimentation. Furthermore, as taught by, Fukuichi, a high-density perpendicular recording medium would be generated.

Still further, (as per claim 2) wherein the recording/reproducing temperature is -20 to 100 degrees C is considered to encompass a typical recording/reproducing temperature; (as per claim 3) wherein the ferrimagnetic material is any of an alloy of GdFe system, an alloy of DyFe system and a garnet ferrite (as discussed, supra); (as per claim 4) wherein the perpendicular magnetic

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recording layer is any of a single layer perpendicular magnetic film or a multilayer perpendicular magnetic film, i.e., Akiyama et al at least would encompass the single layer perpendicular magnetic layer configuration.

#### ***Allowable Subject Matter***

6. Claims 5-9 are allowable over the prior art of record. The addition of “temperature changing means for heating or cooling the backing layer” is considered to read over the prior art of record.

#### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "B. E. Miller", written in a cursive style.

**Brian E. Miller**  
**Primary Examiner**  
**Art Unit 2652**

BEM  
September 17, 2004